

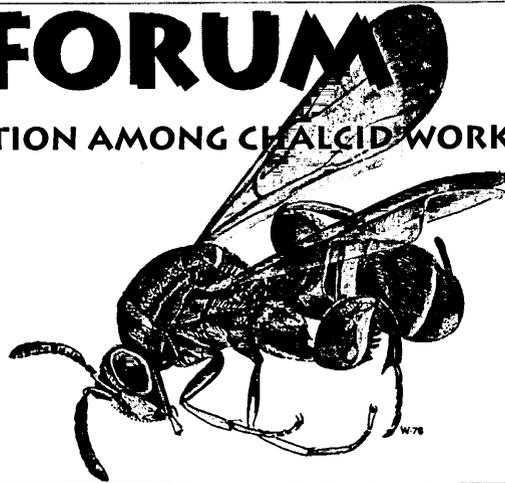
# CHALCID FORUM

A FORUM TO PROMOTE COMMUNICATION AMONG CHALCID WORKERS

Volume 21. December, 1998

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(see Research and Documents)



## Editor's Notes

Welcome to the 21st edition of Chalcid Forum. This issue's masthead is *Leucospis* sp. drawn by Anthony Watsham. Our thanks to Anthony and Gerhard Prinsloo for making it available. This issue is also available on the Systematic Ent. Lab. web site at: <http://www.sel.barc.usda.gov>.

Our thanks, once again, to John Huber for supplying the bulk of the recent literature for this issue.

## Research News

### P. M. Sureshan

Zoological Survey of India, WGFRS, Anniehall Road,  
Calicut, 673 002, Kerala, India

I have been working on Indian Pteromalidae for the last 10 years under the guidance of Dr. T. C. Narendran, University of Calicut, Kerala. My PhD thesis was on Pteromalidae, and to date, I have published 17 research papers on Indian Chalcidoidea. Now I am planning to finalize a revision of Indian Pteromalidae (Pteromalinae) for which I require the study of type material. As the comparison of types is essential before creating new taxa, I am trying to procure types from museums. Most of my requests for types were unanswered except by a few people like Drs. Noyes, Kamijo, Heydon, etc. who were most generous to me. This is a humble request to arrange the loan of type material. I assure a prompt and safe return of the material, and I am ready to exchange my types and other material. I am also really interested in research cooperation with chalcidologists from all around the world, especially on Pteromalidae.

### Christopher Desjardins

Department of Entomology, University of Maryland,  
Maryland, 20742 USA

I am beginning my PhD work at the University of

Maryland under the direction of Eric Grissell and Mike Schauff. I am currently revising the genus *Bootania* (Torymidae) with Eric Grissell and recently accompanied him on a trip to South Africa to investigate *Megastigmus* (Torymidae) as a possible biocontrol agent for Brazilian pepper.

For my PhD work, I plan to revise the Diparinae (Pteromalidae) on a world level and develop a phylogeny for the group. After I finish the phylogeny, I hope to investigate how sexual dimorphism has evolved within the group. I would be very interested to hear from anyone who has collected diparines ([desjar@wam.umd.edu](mailto:desjar@wam.umd.edu)), as there are many geographical gaps in the collection at the USNM.

### Eric Grissell

Systematic Entomology Laboratory, USDA, c/o  
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From January - March 1998 I spent three months in South Africa. Much of this time was centered on field work in Western Cape Province and studies at the South African Museum (Cape Town) with Simon van Noort, but I also spent a few days with Gerhard Prinsloo in Gauteng and Mpumalanga provinces. The primary goal of this work was to unravel the identity, distribution, and host preferences of what historically have been treated as three species of seed-feeding wasps, each believed to attack a different genus of plants in the Old World. Two of these presumed wasp species were accidentally introduced into the United States. One wasp (*Megastigmus pistaciae*) attacks cultivated pistachio (*Pistacia*) nuts in California, and the other (*Megastigmus transvaalensis*) attacks Brazilian pepper (*Schinus*) in California, Florida, and Hawaii. *Schinus* is considered both a commercial and ornamental tree in some areas, and an invasive weed in others. My research has focused on how many species of wasps are involved, how much host shifting is possible, and how these wasps have been transported from various parts of the world. Part of this research is being undertaken in cooperation with Gerard Prinsloo. I'm also

attempting to coordinate a project with several colleagues to collect and analyze *Megastigmus* specimens collected or reared from seeds of *Pistacia*, *Schinus*, and *Rhus* from various parts of the world for DNA studies in an attempt to trace the movement of these species.

### George Japoshvili

Department of Invertebrate Animals, Institute of Zoology, Chavchavadze av. 31, 380030 Tbilisi, Georgia

I work on the parasitoids of coccids, psyllids, and whiteflies in Georgia, mainly from the families Aphelinidae, Encyrtidae, and some Eulophidae.

## Books & Reviews

**A Review of the Genera of Australian Encyrtidae (Hymenoptera: Chalcidoidea) Described from Australia by A. A. Girault with a Checklist of Included Species.** Edward Dahms & Gordon Gordh. *Memoirs on Entomology, International*, Vol. 9. Associated Publishers. 518pp.

This book, begun, according to the authors, in 1979, reviews the genera of encyrtids described by A. A. Girault from Australia. While the authors do clear up miscellaneous problems with Girault type material, propose a few synonymies and new combinations, the usefulness of this book is severely limited by the artificial nature of the group of taxa reexamined. There is no way, having a specimen in hand, to ascertain if it or the genus to which it belongs was described by Girault, and the included taxa represent only a small subset of the Australian fauna!

The bulk of the book is an alphabetical treatment of the genera and included species. Each generic treatment consists of a "Generic rediagnosis" (actually more of a redescription since diagnostic characters are not singled out) along with notes on hosts, included species, and

generally a section outlining where the authors agree or disagree with the earlier and more comprehensive work on Indo-pacific genera by Noyes and Hayat. Within each genus the included species are treated, beginning with the type species (if described by Girault) and then the rest of the species in alphabetical order and include sections titled "Published data, Girault determined material, Notes, Type Species redescription, and Additional material". Only the first two are always present.

Following the treatments of genera and species are the literature cited, figures, and a number of appendices, including the "delta program character files" which were used for the descriptions. Finally, a species list and generic list comparing the placement originally made by Girault, that of Noyes and Hayat 1984, and that of the authors is given.

Given the nearly two decades that this work has been in progress, and the fact that the authors state that it has been revised and rearranged extensively during that time, it is unfortunate that it could not have been expanded beyond the "original concept" into something that would shed more light on a still poorly known but very interesting encyrtid fauna.

Reviewed by M. Schauff, Systematic Ent. Lab., USDA, National Museum Nat. Hist. MRC 168, Washington, D.C. 20560

## CD-ROM REVIEW

**Catalogue of the Chalcidoidea of the World.** J.S. Noyes, ETI, Amsterdam £159 (UK) \$298 (US)

The publication of this CD-ROM catalogue marks an important step in the history of chalcidology. For the first time we have almost all relevant information on this superfamily at our fingertips and it is easily accessible. This catalogue will stand as one of the most important and useful works on this superfamily, and one which will be essential to almost every chalcidologist as well as many biological control workers, ecologists, and students of parasitoids in general. One immediately apparent drawback is in platform: it can only be used on Windows95 (or more recent versions, although you can run it on Mac systems with SoftWindows). This will immediately make it inaccessible to many people who might be able to afford it.

The information content of this catalogue is excellent. It is a world catalogue of Chalcidoidea, complete to November 1997. It contains information on 21,248 valid species in 2040 genera, as well as all synonyms. There are over 40 fields with associated data, including information on biology, distribution (by country or region), host, host interaction, taxonomy and many more. Each of these categories usually comes with many subdivisions. For example, there are 61 specific terms under the biology

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category, including such things as behavior, biological control, mating behavior, laboratory rearing, sex ratio. This allows for fast searching for specific information. For example, by searching on Chalcidoidea, you can find 834 references to biological control, 145 to mating behavior, 186 to mass rearing; narrower searches are possible, and by searching on Eulophidae you get 155 references to biological control, 26 to mating behavior and 37 to mass rearing. You can ask for lists of species for any given region, or lists of species for any host.

In many cases, multiple searching is allowed. For example, you can find a list of 53 Chalcidoidea which have been recorded as attacking *Bemisia tabaci*; by searching on this list you can find 27 of them which have been recorded from the Nearctic. Occasionally a species name will appear twice in a list like this, so these figures may have to be adjusted down to some extent. A few further clicks of the mouse will give you a list of specific references to any of the parasitoids in question.

The catalogue contains a staggering 36,017 references (317 of which are spurious because they refer to author information on images). However, information from over half of these references has not been entered into the database, with the result that if you ask for pertinent references for Chalcidoidea, you only get a list of 17,659 references. The taxonomic information is very up-to-date and inclusive; unfortunately for the nontaxonomists, many of the biological references have never been incorporated. Thus, some published information might be missing from searches. Searching is quite easy on the reference database, which can be ordered by author or date, and can be searched by author, date, or a key word or phrase. Specific references can be marked for downloading, or entire searches can be downloaded. Be careful here, though, because searches can be case sensitive. A search of the reference data base found zero references containing the phrase "eulophidae" and 967 references containing "Eulophidae". Also, it is quite difficult to use key words because the list of them is mingled with a list of authors. Given the amount of authors who have published on chalcidoids, this makes picking out the approximately 110 key words a bit like finding a needle in a haystack. Certainly, it would be much easier to include these as separate search options.

For any given species, information is readily available on Taxonomy (original name, any combinations, type information and depository, previous combinations, synonyms, misidentifications); Biology (hosts, any hyperparasitoids, host interaction, plant associations); Morphology (any references to papers on morphology or images in the database); and Distribution (by country and region). Similar information is available for each genus, and at the subfamily and family level. The type depository information is quite idiosyncratic. The abbreviation "Ukd\_ldn\_nhm" refers to The Natural History Museum in London. Why not just use BMNH - a published and widely accepted acronym? But this is really more of a

minor annoyance than any real problem, because one touch of a mouse button gives complete information for any of these abbreviations.

Buttons allow one-touch access to many interesting features, such as a taxonomic tree, catalogue style listing, synonym lists, sib-taxa, overviews of genera and species for the higher taxa, and a list of all pertinent references for the selected taxon.

A final feature of this catalogue is an impressive array of 317 scanned images of chalcids. There is a facility for printing these images, but not for downloading them for use in other applications. However, a quick screen dump and some trimming makes them easily available for use in your next slide talk.

There are two main factors in looking at catalogues and/or databases. The first is the quality and completeness of the information in the database. The second is the ease and accuracy with which that information can be retrieved. This catalogue places information developed and gathered by John Noyes into the Taxa information system developed by Dicky S. Yu. Despite the tremendous quantity of important information contained in this catalogue, and the apparent slick packaging and programming of this product, I still find several serious problems with the ease and accuracy with which information can be retrieved.

Obviously, accuracy is more important than ease of retrieval. It is nice to be able to retrieve information easily, but it is essential to be able to retrieve information accurately. There are several idiosyncracies of the Taxa system which mean that the information that someone is getting may not always be what they think it is. I will go through several examples of this. When asked to produce a review for this product, I asked myself how would I want to use this. Then I tried to perform practical tasks that would give me information I wanted to see what was possible.

**Parasitoids of genera:** I wanted to get a list of Eulophidae reared from *Liriomyza*. I performed the following steps. Select "Eulophidae" from the Chalcidoidea table; select statistics; select search by field and content; select host; select *Liriomyza*. By doing this I got a list of 42 hits. After removing a few repeated species, and genera only citations, I had a list of 29 actual species names in a total of 11 genera.

Most people (myself included to begin with) would think that this represented the chalcid species reared from *Liriomyza*. However, this is quite deceptive because that is not what you have, and I am still not sure just what this list actually represents. But, by going back to Eulophidae, and using the list of individual species of *Liriomyza* as hosts (unfortunately this can only be done one species at a time), I could add another 33 species and 2 genera that weren't found by searching on just *Liriomyza*. I believe the first list (29 species) is just a list of species which have been recorded from *Liriomyza* where no species name is given, but it is not clear. Note that the total number of

species recorded in this manner is 62 species in 13 genera; searching on *Liriomyza* produced less than half of them.

**Synonymy lists:** I was quite confused by synonymy lists. Taking an example, when I select *Cirrospilus*, I get a screen which then allows me to select several windows (taxonomy, biology, morphology, distribution). By selecting taxonomy, among other information I find:

SYNONYMY: *Achrysopophagous*, *Atoposoma*, *Atoposomoidea*, *Austrolynx*, *Chrysonotomyia*, *Cirrospilomella*, *Cirrospilopsis*, *Giraultia*, *Gyrolasella*, *Gyrolasella*, *Hippocephalus*, *Ootetrastichoides*, *Parzagrammosoma*, *Plesiospilus*, *Pseudiglyphomyia*, *Pseudochrysocharis*, *Winnemana*, *Zagrammosoma*.

There are several problems with this list. The first is that it includes 3 genera (*Achrysopophagous*, *Chrysonotomyia*, *Pseudochrysocharis*) which are not and never have been considered to be synonyms of *Cirrospilus*. This error in data accuracy is unfortunate, because this error was not in Noyes' original database (I have checked) and was introduced when it was converted to the Taxa system. Another problem, perhaps more serious, is that this is very confusing because it is NOT intended to be a list of the synonyms of *Cirrospilus*. This represents a "synonymic history" of this taxa, and includes taxa which might have at one time been considered as synonyms. To get a list of actual synonyms, you have to go to the menu bar and click on the rose symbol. This is supposed to be self-evident (a rose by any other name ...) but like many features of this system it will certainly not be self-evident to most users. Note that the double entry of *Gyrolasella* is okay, it was actually described twice by Girault.

**Multiple searches:** Multiple searching is allowed, when working from the Chalcidoidea table. Unfortunately, it is not allowed when working from other tables. So, by going through Eulophidae first (from the Chalcidoidea table), I can ask for Eulophidae from a given host, and then run additional searches on the results of the first search. In this manner one can, for example, find a list of Eulophidae recorded from *Liriomyza* in China. However, this list changes depending upon the order in which you do your searches.

By doing your search in the order Eulophidae/China/*Liriomyza*, you get the following list of taxa: *Chrysocharis liriomyzae*, *Chrysocharis pentheus*, *Diaulinopsis*, *Diglyphus isaea*, *Tetrastichus*. By using the order Eulophidae/*Liriomyza*/China you get a similar, but still different, list: *Chrysocharis*, *Chrysocharis pentheus*, *Diglyphus*, *Diglyphus isaea*, *Tetrastichus*. It is quite worrying that the order in which you do searches might affect your results or mean that you do not get information that may be important to you.

Unfortunately, multiple searches and downloading capabilities are not allowed on tables other than the Chalcidoidea table. There are actually 24 tables in this

data base: the most complete one being for Chalcidoidea, and 23 of them containing information on host taxa. You can search a generic index which contains all generic or higher level categories from all the tables, but your search options are much more limited going this way. So, by starting with Agromyzidae, and asking for hosts, you get a list of 433 Chalcidoidea recorded from Agromyzidae. With a touch of a button, this list can be displayed alphabetically by genus and species, or by family. However, you can not run additional searches on this list (for example by country or region, mode of parasitism, etc). Additionally, this list can not be "cut and pasted" into another windows file or program, can not be downloaded, and can not be printed except as a screen dump, which only allows the printing of about 30 names at a time. Thus the utility of this long list is greatly diminished. Again, it is not clear that you are getting all the information you should by doing this. If I go through the generic index list to *Liriomyza*, and then search on parasitoid, I get 58 species of Eulophidae (as opposed to the 62 that I got by searching on Eulophidae in the Chalcidoidea table first).

**Downloading:** As mentioned above, not all lists that are generated can be downloaded. Additionally, downloading is not always as straightforward as it may seem. If I want to print a list of Eulophidae genera, this turns out to be a very complicated task. I have to select Eulophidae from the Chalcidoidea table. I can go to a statistical overview, which shows me the following information:

	genera	species
Eulophidae	283	3977
Entedoninae	80	1156
Euderinae	17	148
Eulophinae	99	1066
Tetrastichinae	87	1607

I can not print or download this information. I can go to any of the subfamilies, and get a list of genera, with number of species in each, but I can not print or download this information. I can go to "taxonomic tree" and show a list of genera in each subfamily, but I can not print or download this information. Finally, I can go to "Catalogue style listing", press ALL, and I will get a list of all taxa (including synonyms) in any group. This list I can download, but there is a trick. If I open the list and download it, I will only get what is stored in memory. If this is a large file, then most of it will be missing. In order to download a large file I have to open it, scroll down one page at a time until I reach the bottom (to make sure it all goes into memory), and then I can download the entire thing. However, this contains genera and species, and I have to go back to it and cut out all the species to finally get my list of genera.

**Cut and Paste:** Another serious problem is that you can not cut-and-paste information. This is especially puzzling, as it is designed to only run in Windows format. Why then

not take advantage of what Windows format does well, which is permitting the transferring of information from one application to another? It is quite annoying to find a reference that you need to copy, and then have to flip back and forth from one screen to the next retyping it.

Other minor errors will occasionally pop up. The type species of *Cirrospilus* is listed as *Gyrolasella elegantissima* Girault instead of the correct *Cirrospilus elegantissimus* Westwood. I suppose this type of error is unavoidable in a work of this magnitude that was developed in one system and transferred to another. However, such errors do seem to be at a minimum, and anyone spotting errors can bring them to the attention of John Noyes (jsn@nhm.ac.uk) who will set them right for the next upgrade.

In conclusion. The information in this database will make it something that every chalcidologist, and many other workers, will want to own. The vast quantity of pertinent information and the speed with which it can be extracted will make it easily worth the price. It is sad that various problems with the information system prevent this catalogue from being as useful as it could be. It appears to be another example of a product that has been designed for use by the designer, and the question "What will the user want out of this system?" has not been asked. I would sincerely hope that the publishers will try to solve some of the many software problems, and will offer free or very cheap upgrades to registered users when they are solved.

**Reviewed by John LaSalle, Unit of Parasitoid Systematics, CABI Bioscience UK Centre (Ascot), Department of Biology, Imperial College at Silwood Park, Ascot, Berks SL5 7PY, UK.**

## Collections

### Collection of Cynipoidea at Institute of Zoology, Kiev, Ukraine

Viktor Fursov

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In Chalcid Forum No. 20 (Dec. 1997), in the paper "The Status of Hymenoptera collection in Institute of Zoology, Kiev, Ukraine" there was a mistake. Dr Luyubov Dyakonchuk was missed, but she is presently curator of Cynipoidea there. So she would like to present information about her collection.

The Collection of Cynipoidea was collected mostly in all geographic zones of Ukraine, and also in Russia,

Moldova, Bielorrussia, Georgia, Azerbaidzhan, Kazakhstan, Turkmenia, Tadjikistan, and Uzbekistan. Some materials come from Hungary, Romania and England. The largest part of collection belongs to the subfamily Cynipinae, including 123 species from 25 genera. Tropical relations with plants were studied for all Cynipinae. Host plants belong to 56 species of 33 genera from 9 families (Aceraceae, Asteraceae, Lamiaceae, Labiaceae, Rosaceae, Fabaceae, Papaveraceae, Umbelliferae and Brassicaceae).

All studied species of cynipids can be separated into 3 ecological groups connected with various flant communities. The first group develops on trees (*Quercus*, *Acer*): species of *Biorhiza*, *Chilaspis*, *Cynips*, *Andricus*, *Neuroterus*, *Aphelonyx* (totally 34 species). The second group develops on shrubs (*Rosa*, *Rubus*): species of *Diplolepis*, *Diastrophus*, *Liebellia* (totally 7 species). The third group develops on herbaceous plants (*Acroptilon*, *Centaurea*, *Cichorium*, *Cirsium*, *Hieracium*, *Inula*, *Phaeopappus*, *Scorzonera*, *Serratula*, *Tragopogon*, *Cousinia*, *Epilasia*, *Echinops*, *Rhaponticum*, *Heteropappus*, *Koelpinia*, *Chartolepis*, *Hymenocrater*, *Glechoma*, *Phlomis*, *Salvia*, *Nepeta*, *Potentilla*, *Eryngium*, *Spirrorhynchus* and *Papaver*): species of *Phanacis*, *Aylax*, *Isocolus*, *Aulacidea*, *Asiocynips*, *Zerovia*, *Liposthenes*, *Timaspis*, *Xestophanes*, *Parapanteliella*, *Panteliella*, *Venustia* (totally 60 species).

Three genera of Cynipids are inquilines: *Synergus*, *Ceroptres* and *Periclistus* (totally 22 species). Two of them are associated with cynipid wasps developing on *Quercus* and one with cynipids on *Rosa*. There are some other subfamilies of Cynipidae in the collection, including Anacharitinae, Aspicerinae, Figitinae, Iballinae, Leucolinae, and Charipinae.

At the Institute of Zoology, Kiev a complete herbarium of all host-plants species is represented, including injured parts of plants and their galls.

### A Brief Overview of the Queensland Museum (Australia) Chalcidoid Collections

Chris Burwell

Entomology Section Queensland Museum PO Box 3300 South Brisbane, 4101 Queensland, Australia. Phone 61 (0)7 3840 7703 Fax 61 (0)7 3846 1226 When phoning or faxing from outside Australia the 0 in parentheses is omitted. Email chrisb@qm.qld.gov.au

The Queensland Museum (QM) is a State Museum located in subtropical Brisbane (the capital of Queensland). It is situated on the banks of the Brisbane River and forms part of the Queensland Cultural Centre which includes an art gallery, state library and performing arts complex. The QM is both a natural and cultural history museum. Within the natural history program,

Entomology is split into two sections, each with a curator and a technician. Geoff Monteith is Senior Curator of "Lower Entomology" and Geoff Thompson is his technician, while I am Curator of "Higher Entomology" and Susan Evans is my technician. Consequently my curatorial brief is quite diverse and I am responsible for most of the more vagile groups of insects including Odonata, Ephemeroptera, Neuroptera, Lepidoptera, Diptera, Hymenoptera and several other orders. However, my main research interest is the Hymenoptera and I specialise in chalcidoids especially eulophids. Susan and I are relatively new kids on the block, I have been at the QM for just over three years and Susan for about 2 years. The previous curator of the section, Ted Dahms was also a chalcidologist, primarily interested in encyrtids.

Queensland is unusual in Australia in having three more or less similar sized insect collections in the one city. In addition to the QM, both the University of Queensland, Entomology Department (UQIC) and the Department of Primary Industries (QDPI) have extensive insect collections. Both also contain some significant holdings of chalcidoids. The QM is the only one of the three which holds primary types and UQIC and QDPI material designated as holotypes is transferred to the QM.

**Significance of the QM Chalcidoidea Collection:** The significance of the QM chalcidoid collections is twofold. The first is its historical and nomenclatorial significance. The infamous A.A. Girault described literally thousands of new genera and species of Australian chalcidoids between 1912 and 1941. The vast majority of his types are deposited in the QM. This enormous collection of types, both pinned (occupying more than 50 drawers) and slide mounted (occupying 6 slide cabinets, each cabinet with 50 trays each holding up to 16 slides) was curated and catalogued by Ted Dahms (Dahms, *Memoirs of the Queensland Museum*, 1983, 1984 and 1986). Copies of Ted's catalogue are still available if anyone is interested. The Girault type collection is of enormous importance to workers on Australian chalcidoids and has much wider significance since many of Girault's species and genera occur in other zoogeographical regions. Secondly, the QM has the second largest holdings of Australian chalcidoids with over 40000 mounted and labelled specimens. Only the Australian National Insect Collection in Canberra is larger. Girault's types aside, almost all the QM chalcidoids have been collected within the last 20 years and many of these have been critical-point-dried. Consequently most of our specimens are in good condition. In addition to the pinned material we also have a large number samples of critical point dried microhymenoptera (including many chalcidoids) which we have not had the time or resources to mount. These samples are stored in small plastic containers and I am happy to sort through this material and pull out and mount specific groups on request. The bulk of our accession chalcidoids have been collected by sweeping. A small percentage have been collected by malaise traps and fewer still have been reared.

**Taxonomic Coverage:** The taxonomic coverage of our chalcidoids somewhat reflects my research interests and those of the previous curator Ted Dahms in that the best represented families are Eulophidae and Encyrtidae. In most families the bulk of our holdings are unsorted accessions and there is relatively little identified material, most of which was determined by Zdenek Boucek. The exceptions are the Eulophidae (except Tetrastichinae), Encyrtidae, Tetracampidae, Eupelmidae and Torymidae where most specimens have been sorted at least to genus level.

Approximate Holdings of Chalcidoidea (excluding Girault type material)

Agaonidae 200-300; Aphelinidae 500-600; Chalcididae 1200-1300; Elasmidae 1200-1300; Encyrtidae 9700-9800; Eucharitidae 200-300; Eulophidae 11000-11500; Entedoninae 3100-3200; Euderinae 400-500; Eulophinae 2600-2700; Tetrastichinae 4800-4900; Eupelmidae 2400-2500; Eurytomidae 1900-2000; Leucospidae 10-20; Mymaridae 1400-1500; Ormyridae 20-30; Perilampidae 100-200; Pteromalidae 6600-6700; Signiphoridae 20-30; Tanaostigmatidae 100-200; Tetracampidae 100-200; Torymidae 1200-1300; Trichogrammatidae 200-300.

**Geographic Coverage:** Almost all our chalcidoids are Australian. We have very little extralimital material apart from a few exemplars of exotic species and a few specimens from Fiji. Similarly, since we are a provincial museum, the geographic coverage of the collection is heavily biased towards Queensland and we have only scattered material from other states. Within Queensland most of the specimens are from three regions. Many are from the south-eastern corner of the state, particularly the Brisbane hinterland. Northern Queensland is also well represented, especially the Wet Tropics and the drier areas around Chillagoe, Mareeba and Mount Molloy, west of Cairns. In particular, Ted Dahms and his technician Gudrun Sarnes spent considerable effort recollecting chalcidoids in Girault's type localities in the Cairns Region, especially around Gordonvale. We also have considerable numbers of specimens from the more arid regions of south-western Queensland, especially around Charleville.

**Loans and Visits:** We do loan primary type material, including both slide-mounted and pinned Girault types, but only to registered scientific institutions. There are restrictions placed on the number of types that can be loaned at any one time and loans are generally for no longer than 3 months. Other material is generally loaned for one year but longer term loans can be negotiated. Short term visits by scientists are welcome and bench space and microscopes are generally available, although anyone planning to visit the QM after the International Hymenoptera Conference in Canberra should let me know as soon as possible as space is filling up.

## Recent Literature

by John Huber

All titles and journal abbreviations should be checked by the reader for accuracy if they are to be quoted in scientific papers. Strictly taxonomic references are marked with an asterisk (\*).

- Ahmad, M.J. 1998. One new species and two new records of *Spalangia* Latr. (Chalcidoidea: Pteromalidae) from India. *Shashpa*. 5: 9-12.
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